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PROBLEMS OF SOCIAL STATISTICS AND SOCIAL RESEARCH.*

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Problems of social research require for their practical solution an adequate and conclusive basis of data free from even the suspicion of bias in their collection or serious error in their analysis. The ever-increasing complexity of social relations demands a clear presentation of social facts and forces, which, unfortunately, is only too often wanting as an underlying basis for plans and purposes of social reform. The collection of social statistics is almost invariably a most difficult and complex task, involving what may often amount to impertinence in a scientific inquiry into the actual facts of domestic life and the more or less successful individual adaptation to conditions as they are. This, for illustration, is best made evident in the numerous efforts to collect data as to household expenditures among wage-earners and others, but with patience and skill some, at least, of these investigations have produced conclusive and very valuable results. The value of investigation into social conditions is increased in proportion as the field is limited and as the investigator brings personal qualifications of an exceptional character to bear upon the collection of the data required. Those who are most familiar with the life and labor of the wage-earner, the poor and the pauper class, are, by their knowledge and experience, the best qualified to secure the original data upon many of the most important questions

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which demand solution. Unfortunately, it is difficult to secure qualified investigators, whose judgment has not become impaired by repeated impressions of social misery resulting from circumstances or conditions which may have no connection whatever with the problems under consideration. The object in view being strictly a scientific one, every effort should be made to eliminate sentimental bias or prejudice strongly inclined towards unwarranted conclusions or an unwarranted interpretation of the facts collected. Nowhere is the risk of amateur work greater than in the field of social statistics and social research, and, *per contra*, nowhere is the necessity of exceptional ability and discriminating judgment greater than in this. In economic statistics, such as prices and wages, cost of production and hours of labor, errors of judgment are less likely to occur, in that the degree of variety in the units to be considered is much less. Such data also are much less elusive in character, and not so complex in their relation to other and still more involved problems.

In its finality social research, as the term is generally understood, may be said to have for its object the solution of the problem of poverty, with all its resulting problems. Such social investigations, therefore, are largely concerned with an inquiry into the actual circumstances of life on the part of the poor and the relation of their condition to the wealth and circumstances of the materially more fortunate, or the well-to-do and the rich. The question which is being asked with ever-increasing frequency is whether, under modern conditions, it is necessary that there should be as large a proportion of the poor and pauper class as are actually met with in civilized countries. Social inquiries are being directed to ascertain whether poverty, pauperism, ignorance, and crime are not more the result of an accidental miscarriage of human effort than of inherent limitations of human society as it is organized. Those who have felt most strongly upon the subject of social misery have elaborated in detail plans of radical social reform, but the many ideal communities which have been established have all been more or less complete failures. There are those who deny that

social progress is actually being made and who, in the words of Henry George, believe that "the poor are growing poorer, and the rich are growing richer." Theories are being spread broadcast over the earth as to the ever-increasing duties of the rich, the well-to-do, and even the prosperous towards those who are living under less fortunate material circumstances and conditions. In the abstract it is a question of social justice of one group of human beings towards the other, and it must be admitted that within the last generation, at least, a sense of social responsibility has been developed which was unknown in earlier and even comparatively recent times. The evidence is overwhelming that much of what goes under the term of social legislation has been productive of decidedly beneficial results, having improved the conditions of life generally and eliminated, among others, the needless evil of child labor and of degrading work on the part of women formerly employed in many industries unsuitable to the sex and certain to produce physical and moral deterioration. Much good has also been accomplished by social legislation relating to factory inspection, hours of labor, employers' liability, etc., all of which warrants the conclusion that even greater results may be attained by still more effective legislation or associated effort for the benefit of the mass of mankind not in a position to help itself.

As an aid toward the solution of these problems, social statistics are indispensable, and it may be said without fear of contradiction that much of the miscarriage of effort in social legislation has been the result of misleading statistics and even more of misleading analysis, little short of amateur guesswork. By slow degrees the inadequacy of the present basis of fact along certain lines of social legislation has been recognized, and efforts are being made in every direction to make such investigations more qualified, trustworthy, and practically useful. The time has passed when a plain statement of absolute fact relating to social conditions possible of amelioration or change could go unchallenged or leave a problem unsolved, merely as a matter of complacency, indifference, or criminal neglect. The present age demands the truth, and, when the truth has

been secured, it is willing to take action and institute reforms at whatever cost, provided the result is for the distinct and unquestionable benefit of the mass of mankind.

There is an essential difference which marks and limits the field of social statistics, and that is that the most important data have to be secured by private enterprise for a large variety of purposes, while economic statistics are properly a matter of government concern. There is a natural and proper limit upon government inquiries into the facts of every-day life and labor, as made evident by the great difficulty of the Census Office to secure data as to sickness and infirmity among different classes, while still more delicate investigations, such as, for illustration, the sanitary condition of homes, the physical condition of children, the degree of frequency of periodical savings, and the expenditures for drink, are evidence that private enterprise can do the most efficient work in this field of scientific research. But another difficulty in such investigations is that the trained investigator is rare, and it is only too often an amateur who takes up such work as a sort of plaything for an idle hour. Yet of all the delicate tasks to which the human mind may apply itself the collection of social facts and the study of collective social phenomena are the most difficult, but at the same time the most valuable.

Social research, in a limited sense, has for its chief concern a qualified inquiry into the underlying causes of poverty and economic dependence on the part of a disproportionately large number of wage-earners and others constituting the mass of mankind in all civilized countries. Since the beginning of time the weak and dependent have been compelled to rely upon the strong and more fortunate, and to the end of time, in the nature of things, this must needs be so. But in a free democracy it is a political as well as a social duty, by majority rule, to bring about, through an intelligent co-operation in State and associated effort, a condition of things most favorable to the highest development of social units and efficiency in citizenship and social relations. Blind faith is often placed in law and legislation to bring about reforms which, in too many cases, can only

result from slow changes in human character, in economic conditions and industrial methods, and, the more clearly this is understood, the better for those whose interests are at stake. As an aid in the solution of social problems, human benevolence is called into action as a Christian charity and duty, but in its aims and purposes it stands in much the same relation to human society as the medical man does to the patient suffering from incurable ills,—it may relieve, and does relieve, much suffering and hardship, but it no more removes the cause of social ill-health than the physician removes the cause of disease by the more or less effective cure of the suffering patient. Many years ago the result of this theory of social reform through the efforts of benevolence alone was summed up in the following brief statement, which is well deserving of being repeated on this occasion:—

On every hand he [the tender-hearted man of good means and substance sees the most glaring anomalies in society; immense wealth and gigantic poverty; the highest points of civilization and the lowest depths of barbarism; men and women living in possession of an overflowing abundance of the elegancies and comforts of existence, while in the same city those of like passions with themselves, members of the same great human family, are herding together not so much like savages as like wild beasts,—in short, a state of things rising on one side as near to heaven as on the other it sinks near to hell. His conscience gives him no rest till he has done something by way of remedy; so he subscribes to some charitable institution, writes a pamphlet, or forms a philanthropic society. He labors for a time; tries various schemes for man's regeneration; opens a school perhaps, or a soup-kitchen, or promotes emigration; and ultimately finds himself so much imposed on and deluded by the very people whom he is laboring to serve, that he gives up the profession of philanthropy, and returns to enjoy the good things of this life without feeling as previously that "the trail of the serpent is over them all."

And in continuation, speaking of this class of persons,—

Seeing nothing but distress, their relief of it is direct and prompt, and necessarily temporary. The causes of distress are left untouched, and constantly reproduce cases of the same kind; and these benevolent gentlemen cannot be induced to adopt the slow and apparently harsher, but in

reality more merciful plan, of patiently investigating causes and removing them if they are removable.*

In this same sense I would define the objects of social research; that is, to ascertain with absolute impartiality the causes conducive to social ill-health, chiefly poverty and economic dependence, and, after having ascertained the true and real causes, to suggest a rational and practical method of social reform, in conformity to the same exact scientific principles which govern in investigations in applied chemistry or economic geology. Poverty and want are such closely related terms that every age attaches to them new and different meanings, but it may safely be asserted that needless poverty at any time is that which inflicts upon the many such burdens as substantially hinder them in the struggle for the maintenance of the highest possible rational standard of life. It is not so much a question of suffering as of a needless struggle against removable odds that concerns the social legislator and the rational philanthropist, who by their aid and co-operation would materially assist in the social amelioration of the present age.

It is difficult in a brief outline to present a working plan of social research, applicable alike to the many and widely different problems which require consideration. Every such investigation should of necessity be preceded by a preliminary research into the available literature of the subject, from which such extracts should be made as afford an intelligent historical retrospect of what has been done or accomplished in the same direction in the past. Such preliminary research would bring out the fundamental essentials of the subject and emphasize the direction which an original inquiry should take and the scope of the same in the light of a past experience. The second requirement is a complete statistical abstract of all the existing statistical material relating to the subject under consideration, critically reviewed and subjected to a qualified analysis to determine the statistical scope of the proposed inquiry and to emphasize the elements of most determining and practical impor-

* Chambers's "Papers for the People," vol. ix, art. Industrial Investments and Associations. Philadelphia, 1854.

tance. Upon such a basis of descriptive and statistical information a working plan can be formulated for the third step of an *original personal inquiry* into the actual conditions and facts of the question and problem under investigation. The personal inquiry should be made by the very best obtainable talent, thoroughly familiar with the technical elements of the problem, to secure an absolutely trustworthy basis for subsequent conclusions. The results of personal investigation should be recorded in full detail from day to day as the investigation proceeds, to eliminate as far as possible errors resulting from defects of memory or the accidental omission of minor details which by accumulation might assume considerable importance. It cannot be too much emphasized that for such an investigation the best possible talent should be secured, upon exactly the same principle as expert chemists of the highest grade are employed in commercial enterprises to carry on original research for the purpose of introducing far-reaching changes in commercial practice. The method followed in the original inquiry should be fully described, so that every fact of possible importance should be fully known and every observation of value made by the investigator should be made a matter of permanent record.

The fourth step in the investigation should be the tabulation of new statistical material obtained by personal effort and its co-ordination to data previously collected or otherwise secured. The fifth and last step should be the final analysis of all the material brought together in the form of a convenient report, thoroughly indexed, with the conclusions set forth in the form of a broad generalization, precisely emphasizing the essential points demanding consideration, with the recommendations warranted in the light of the facts secured. There is nothing new in this method, which has been followed in many social and economic investigations, except the order of the arrangement and the definite connection between the investigation, the conclusions, and the ultimate recommendations. In other words, it is of the utmost importance that the responsibility of the investigator should be absolutely fixed by the final suggestions for specific action warranted in the light of indisputable truths.

When this method is followed, it will be found that the conclusions speak so emphatically for themselves that the recommendation for specific action remains an unquestionable argument in favor of a rational and practical theory of social reform.

Having briefly outlined the utility of social statistics and a practical method of social research, I would briefly call attention to a number of the more important problems which require to be investigated and reported upon along the lines previously indicated. It will be impossible for me to enlarge beyond the mere mention of the specific subjects, except to indicate similar lines of inquiry or the urgent necessity of a better knowledge of the facts than is at present extant. All of these problems bear immediately upon the question of poverty and pauperism and to a considerable extent upon dependence in old age, resulting from social inefficiency or ill-adjustment of existing social conditions.

THE PROBLEM OF WAGE-EARNERS' EXPENDITURES.

(1) I would suggest a really conclusive inquiry into the subject of income expenditures among wage-earners and others for the essentials of life, and the relation of such expenditures to savings, investments, and accumulations for self-support in old age. Such investigations have frequently been made, but as a rule under serious limitations. It would be desirable to very materially enlarge the scope of such an inquiry, although possibly reducing the number of items of expenditures to be considered. Of recent investigations in this direction the most useful and suggestive are "The Wage-earners' Budgets" in Rountree's "Study of Poverty in York," the investigation of the Economic Club of London, the Family Monographs by Elsa G. Herzfeld, Wage-earners' Budgets by Mrs. L. B. More, published in 1907; also, the various investigations by Federal and State governments; and, finally, the rather extended investigation by the British Board of Trade, published as a memorandum of the consumption and cost of food in workmen's families, in 1904. (See Statistical Appendix No. I.)

THE PROBLEM OF PERIODICAL SAVINGS.

(2) There is urgent need of a conclusive inquiry into the actual distribution of wealth among wage-earners in representative industrial cities, to ascertain the extent to which periodical or systematic deductions are made from the weekly income for purposes of permanent savings and investments as security against dependence in old age. The various investigations which have been made into the distribution of wealth in the United States, among others the treatise by Charles B. Spahr, preclude anything like a rational conclusion as to the exceedingly important question whether the widely diffused material prosperity of the United States is substantially increasing the economic security of the masses by personal accumulation of registered property. It is of importance to keep in mind the fundamental distinction between temporary material well-being resulting from high wages and the permanent accumulations in the form of capital invested in registered property by an increasingly larger proportion of the population. Only the latter can be considered real prosperity and of permanent utility to the nation, as well as the people at large. To the extent to which systematic deductions are made from weekly earnings for the purpose of accumulations and investments, the actual wealth of the nation will increase, or correspondingly diminish where this is not the case.* Equally intimate is the relation of dependent poverty, especially in old age, to systematic habits of savings during the active or productive period of life. An investigation along these lines would be productive of the greatest possible benefit, to set at rest the often extreme and

* This problem, of course, is as old as the industrial history of nations. As early as 1677, a Mr. Henry Peacham published a tract on "The Worth of a Penny: or, A Caution to Keep Money. With the Causes of the Scarcity and Misery of the want thereof, in these hard and Merciless Times. As also how to save it, in our Diet, Apparel, Recreations, etc., and also what honest Courses men in want may take to live."

Another early publication on this subject is "Documents Relative to Savings Banks, Temperance and Lotteries," published by order of the Society for the Prevention of Pauperism in the City of New York, 1819, probably suggested by an earlier publication by the Right Hon. George Rose on "Observations on Banks for Savings," London, 1816. The same year there was published an "Essay on Provident or Parish Banks for the Security and Improvement of the Savings of Tradesmen, Artificers, Servants, etc., until Required

sinister assurances of those who hold that the actual as well as the relative degree of economic dependence is greater to-day than in former years.

DETAILS OF SAVINGS-BANK ACCUMULATIONS.

(3) Closely connected with the preceding subject suggested for social research is the need of a qualified statistical inquiry into the essential details of savings-banks accumulations, to determine how far such accumulations are really the deposits of wage-earners. It would serve a very useful purpose to ascertain the occupations or elements of the wage-earning population most inclined to make use of these institutions and the relative size of the amounts accumulated, the period of time required to produce the accumulation, the average deposits made per annum or during shorter periods, the effect of interest on the deposits, and the extent to which such interest payments are utilized to provide for self-support during periods of unemployment or in old age. There is as yet but a very fragmentary literature of the subject, and only a very limited analysis has ever been made of the entire subject of savings-banks accounts. One of the earliest investigations of this kind was made by Hon. Carroll D. Wright, as Commissioner of Labor of Massachusetts, in 1873, and no subsequent investigation has been made which would permit of definite conclusions as to the social utility of savings-banks to carry out the laudable intentions and purposes which lie at the basis of these useful institutions. (See Statistical Appendix No. 3.)

for their Future Wants or Advancement in Life, containing a Brief History of the Several Schemes for the Above Purpose and Developing the Causes which have Promoted or Prevented their Success," by Barber Beaumont. Mr. Alexander Robertson in 1854 published an "Essay on Periodical Savings Applied to Provident Purposes, with Remarks on the Constitution and Practice of Friendly Societies and Savings Banks and Suggesting a Plan of Self-Protecting Life Insurance," inscribed with the following quotation from the *London Times* of Nov. 27, 1850: "There is not a more painful chapter in the history of our social condition than that which records the usual fate of our most deserving laborers, artisans, domestic servants, clerks, and others who in the turn of life and in the decline of power attempt to get a better interest for their store than the £2 15s. per annum which is all that the savings bank can afford."

THE PROBLEM OF SAFE INVESTMENTS BY WAGE-EARNERS
AND THE POOR.

(4) Equally important, if not more so, is the necessity of an inquiry into the entire subject of investments by wage-earners and others, including the poor or casual laborers, to determine whether such investments as are made by the least prosperous element of the population are, on the whole, best adapted to their needs, in combining the essentials of absolute security with a fair degree of remunerative return. This subject has attracted considerable attention abroad, and, especially in England, investigations have been made from time to time, some of which at least have been productive of very good results. There is not the slightest reason to question the prevailing opinion that enormous amounts saved, as the result of industry and frugality, by wage-earners are wasted and dissipated in worthless investments made upon pretended assurances of exceptional security and exceptionally profitable results. It would be of value to determine for a sufficiently large number of wage-earners, in representative industrial centres, the character of their investments in lands and houses, tenement property, shares in industrial or other corporations, state or municipal obligations, or any other form of registered property. It would also be of value to include in such an inquiry the subject of betting and gambling, to ascertain how far the earnings of the poor and fairly well-to-do are wasted in these directions. As a basis for any rational inquiry into the subject of State pensions, which is assuming an ever-increasing importance, it would be of much practical value to know how far among the aged of the present period there are those who were formerly wage-earners, but who found it possible by thrift, economy, and good judgment to secure for themselves a reasonable competency for the needs of their declining years. Manifestly, the lesson of such lives must needs be of the greatest possible educational value, as proving conclusively the possibility of obtaining by frugality, self-denial, and good judgment

what is by some demanded as a gratuity or modified form of poor-relief from the States. (See Statistical Appendix No. 4.)

THE PROBLEM OF PREVENTABLE INDUSTRIAL DISEASES.

(5) One of the chief causes of poverty is preventable illness and premature mortality on the part of the bread-winner or other wage-earning members of the family. A comprehensive investigation into the relation of preventable disease to poverty in general, and in particular to dependence in old age, would serve a most useful purpose by emphasizing the cost and economic consequences of preventable sickness. The public burdens resulting from preventable diseases are very much greater than generally assumed, but even greater is the impaired physical efficiency, caused by tuberculosis, typhoid, and other preventable diseases. Newsholme, one of the foremost English authorities, has emphasized the intimate relation which exists between poverty and disease, and it is a generally accepted theory that the duration of life among the poor is much less than among the well-to-do, while even greater among them is the amount of preventable disease. Only one really conclusive investigation has been made in this country into the subject of acute and chronic diseases among the population at large, in connection with the last State Census of Massachusetts, which indicates the direction that such investigations should take among some selected elements of the population, with special reference to the relation of poverty to disease.

It is true that, in a measure, the economic consequences of illness among wage-earners are mitigated by insurance, but the effects are most serious among the poor and even the pauper element, among whom insurance protection is practically out of the question by reason of their poverty. Such an inquiry might be enlarged to include the whole problem of possible physical deterioration and its relation to poverty and physical impairment, with special reference to economic dependence in old age. Extensive investigations in this direction have been made in England by a Departmental Committee, amplified

by numerous statistical researches into the physical condition of school children.* The conclusions of these investigations are decidedly to the effect that poverty bears heavily upon the physical side of life, and is, unquestionably, an immediate cause of physical deterioration. In this country, on account of the heterogeneous population of our large cities, the problem is much more complex and requires to be investigated with much greater care. Anthropometric measurements of different elements of the population would serve a decidedly practical purpose, provided they are made to include the adult population employed in industries liable to physical over-strain and other resulting industrial diseases. Most of the existing data upon the relation of factory labor to the health of the operatives are antiquated, and no longer of practical value as a guide in modern factory legislation.† (See Statistical Appendix No. 5.)

THE PROBLEM OF PREVENTABLE INDUSTRIAL ACCIDENTS.

(6) A corresponding inquiry into the subject of industrial accidents, the cause of their frequency and most practical method of prevention, but in particular such accidents as occur in disproportionate numbers among men employed in mining, on railroads, in shipping, building operations, etc., would serve an equally important purpose, more so in view of the increasing agitation for radical legislation upon the subject of employers' liability. Remarkable as the statement may sound, there has never been made a qualified inquiry into the subject of industrial accidents and their economic importance as contributory causes to dependence in old age, nor has much progress been made in the direction of reducing the frequency of industrial accidents to a minimum. In fact, the risk in certain occu-

* Report on Physical Deterioration, 3 vols. London, 1904. Parliamentary Papers, Cd. 2175, 2186, and 2210. See also Report of Investigation into Social Conditions in Dundee, Scotland, published by the Dundee Social Union, 1905.

† The recent Report of the British Departmental Committee on Industrial Diseases may be consulted to advantage. The same has been published as Parliamentary Papers, Cd. 3495-96. London, 1907.

pations is greater to-day than in former years, and the subject lends itself peculiarly to social research, in that many of the associated phenomena are outside of the scope of a strictly limited statistical investigation. In connection with such an inquiry the subject of employees' benefit funds might properly receive special consideration and also the related subject of a voluntary or compulsory system of old age pensions among persons employed in exceptionally hazardous occupations. There is probably no subject upon which more misleading information has been printed than government insurance as it is practised in certain European countries, and an entirely disinterested qualified investigation of the relation of state effort in this direction might prove decidedly beneficial as an aid towards a better understanding of the true labor problems of the present day. (See Statistical Appendix No. 6.)

THE PROBLEM OF EMPLOYMENT FOR THE CRIPPLED AND THE OTHERWISE PHYSICALLY IMPAIRED.

(7) Closely related to the subject of industrial diseases and industrial accidents is the necessity for qualified research into the most practical method and means of procuring suitable employment for persons injured, crippled, or otherwise impaired in physical efficiency in consequence of their occupation. At present it is a deplorable fact that these unfortunates often become public charges or find themselves dependent upon a small pension, but with no useful occupation. Inquiry should be made as to whether fairly remunerative employment cannot be found for these unfortunates, or occupations peculiarly adapted to the needs of the adult blind, the one-armed or one-legged, or otherwise physically impaired, so that they may not be forced, after a life of honest industry, to live their remaining years in total idleness as beggars, or otherwise dependent upon private or public charity. (See Statistical Appendix No. 7.)

THE MORTALITY AND MORBIDITY OF WAGE-EARNERS AND THE
POOR.

(8) There is need of a qualified investigation into the whole subject of mortality and morbidity of wage-earners and their families, including the poor and the pauper class, to determine how far the incidence of premature mortality falls upon this element because of its poverty, and to ascertain the most practical means by which such mortality, both in infancy and old age, may be substantially reduced to the normal rate prevailing among economically better situated elements of the population. In part this inquiry includes the investigation into the subject of the relation of preventable disease to poverty and industrial accidents previously referred to, but in its larger aspects the problem of death is the most significant and perhaps the most important, affecting the welfare and progress of the race. There are, unfortunately, no trustworthy comparative tables of mortality for the different elements of the population according to their economic condition, except such as relate to certain foreign cities and countries, where the conditions of life are probably quite different from those existing in the United States. There can be no question whatever but that, while the crude death-rate has declined within the last generation, there is still a very lamentable amount of premature mortality, especially in infancy, but also at every period of adult life. So that, broadly speaking, even among the more satisfactory conditions of present-day civilization, a relatively small proportion attain to normal old age, which should afford a period of gratifying retrospection after years of continuous industrial activity. The researches into this subject by Metchnikoff and others warrant the conclusion that we are as yet very far from having attained to the largest possible average duration of human life, but in particular is this true of the industrious poor, who are exceptionally exposed to conditions diametrically opposed to good health and long life. Considering that among this element the years of life are practically the only real capital available, and that premature death is the greatest affliction which can come

to a wage-earner's family; and considering further that, aside from every other sentimental consideration, the economic consequences of death alone are often very serious, as including the possible expenses of a long illness and the unfortunately extravagant expenditure for burial and mourning, the economic aspects of premature death assume the greatest possible importance the more thoroughly the entire subject of human mortality is taken into consideration.

It is one of the most definite evidences of modern advancement that at last certain preventable diseases are being singled out for associated effort in the reduction of their frequency, among which for the present pre-eminently stands tuberculosis, as perhaps the most important of them all. Of nearly equal importance, however, are the efforts made towards the reduction of infant mortality along lines of effort which are gradually becoming more scientific and correspondingly more effective, and the same is true of other preventable diseases, such as typhoid, malaria, and yellow fever. The more clearly the facts of the subject are understood and the more effectively the truth is replacing guesswork opinion, the more satisfactory the results to the community at large, and in particular to the wage-earning element and the poor. In no direction is the evidence of the value of scientific research so overwhelming as in the case of malaria and yellow fever, regarding which all former theories were at once overthrown by the results of a qualified inquiry into the actual facts and circumstances favoring the transmission of the disease through a particular species of mosquitoes to human beings. While the risk of epidemics of these diseases can never be entirely eliminated, it has been reduced to a minimum, and it is safe to hold that any subsequent outbreaks will never again assume the serious proportions of the past.

It is necessary to emphasize these evidences of the value of scientific research in one direction to prove the corresponding value of such research in other directions more immediately applicable to the solution of pending problems of social life. However remote the connection may appear between the prob-

lem of preventable disease and the problem of preventable poverty, it will be found upon careful inquiry that there is a very close connection, which warrants the conclusion that the elimination of the one will largely aid in the elimination of the other.

THE PROBLEM OF SUICIDE.

(9) One very important subject which has thus far attracted but a very limited amount of attention is the frequency of suicide, which appears to be decidedly on the increase throughout the country, but chiefly among a class which may be considered the failures in life, as it is viewed from a purely individual and material standpoint. Suicide occurs chiefly among men at an age of the greatest possible economic value, when the largest expenditure has been made in behalf of the individual with the hope of an adequate economic return. While much has been written upon the causes of suicide, there has lately been made one suggestion which appears to connect the act of self-murder in many instances with visual defects, or eye-strain. Dr. George M. Gould, of Philadelphia, who has investigated the subject quite extensively, has come to some very definite conclusions which would make it strongly probable that many cases of self-murder could easily be prevented by the correction of such defects and the restoration of normal eyesight, with the resulting elimination of mental and physiological disturbances. Suicide is rarely the result of an immediate impulse, but the contemplation of the act usually extends over a period of years, and, if qualified advice were rendered at the opportune moment, many a one would be assisted over a brief period of despondency and live to fulfil the larger and higher purposes of life. Considering that there occur annually in the United States not less than ten thousand suicides and that a large number of these individuals are bread-winners and the heads of dependent families, including women and children, who because of wilful death become a charge upon the community and a public burden, the subject is one which seems to lend itself to social research

and regarding which a true statement of the facts would be of great practical value. (See Statistical Appendix No. 9.)

THE PROBLEM OF PHYSICAL DETERIORATION.

(10) In conclusion, I may call attention to the serious problem of possible physical deterioration as the result of the ever-increasing proportion of population living under urban conditions, made best evident in the physical condition of children during the period of school life. Qualified investigations which have been made into this subject indicate the probable intimate relation which exists between unhygienic conditions of home and school life and resulting ill-health and impaired physical efficiency in later years. What has been done in this direction by the New York Committee on the Physical Welfare of School Children is most commendable, but the field of inquiry requires to be very much enlarged, so that the conclusions regarding the different elements of the population according to race and nationality may rest upon a more substantial basis of statistical material than is at present the case.

Investigations made in Scotland by Mackenzie and Foster furnish conclusive evidence that the physical status of the children of the poor is decidedly inferior to that of the children of the prosperous and well-to-do, and from their report, which was published last year, regarding the physical condition of the school children of Glasgow, I quote in part as follows:—

If we take all the children of ages from 5 to 18, we find that the average weight of the one-roomed boy is 52.6 lbs.; of the two-roomed, 56.1 lbs.; of the three-roomed, 60.6 lbs.; of the four-roomed and over 64.3 lbs. The respective heights are 46.6 inches; 48.1 inches; 50.0 inches; and 51.3 inches. For girls, the corresponding figures are:—Weights, 51.5 lbs.; 54.8 lbs.; 59.4 lbs.; 65.5 lbs. The heights are 46.3 inches; 50.8 inches; 49.6 inches; 51.6 inches. These figures show that the one-roomed child, whether boy or girl, is always on the average distinctly smaller and lighter than the two-roomed; and the two-roomed than the three-roomed; and the three-roomed than the four-roomed. The numbers examined are so large, and the results are so uniform that only one conclusion is possible, viz.:—that the poorest child suffers most in nutrition and in growth. It

cannot be an accident that boys from two-roomed houses should be 11.7 lbs. lighter on an average than boys from four-roomed houses and 4.7 inches shorter. Neither is it an accident that girls from one-roomed houses are, on the average, 14 lbs. lighter and 5.3 inches shorter than the girls from four-roomed houses.

The results of this investigation clearly emphasize the value of social research and of trustworthy social statistics secured by qualified investigators in strict conformity to the methods of science. They teach emphatically the duty of preventive methods in place of mere thoughtless giving of relief, for, as the Committee of the Charity Organization Society of Edinburgh have well said, in their equally important report upon the physical condition of the children of that city, after first calling attention to the needless suffering of children, "plainly and emphatically attributed to an excessive indulgence in strong drink," that "One other fact also is plain, and that is the wastefulness and demoralization caused by unsystematic and indiscriminate charitable relief"; and to this they add the following very suggestive words, "It cannot be doubted that many agencies and persons hinder who seek only to help, and the pity of it is that those who secure the bounty of a well-disposed, but indiscriminate, philanthropy are the least deserving."

The literature of poverty, pauperism, its causes and remedies, is enormous, but almost entirely wanting in a statement of indisputable facts or of social statistics useful, and in truth indispensably necessary, for qualified social research. Efforts without number have been made through all the ages and throughout the world to relieve suffering and sorrow, while few qualified attempts have been made to remove the causes of strictly preventable poverty. In the words of Mr. Edward Dennis, one of the truest friends of the poor of Scotland, whose works, next to those of Chalmers, are the most stimulating and practical, though written forty years ago: "The public seems really awakening at last to some sort of perception of the precipice society in this country is approaching, through the maladministration of the Criminal and Poor Laws. Charity, too, is a frightful evil,—not real charity, but subscription charity. Every

human being has scope enough for all the money and all the effort he can spare in behalf of misfortunes which are known to himself personally, or to the members of his home circle. The gigantic subscription lists, which are vaunted as signs of our benevolence, are monuments of our indifference."*

I have quoted these lines to emphasize the necessity of scientific social research, since there is a very serious danger, if not a practical certainty, that in our indifference toward strictly scientific inquiries in matters of this kind we content ourselves with the result of superficial investigations or unwarranted assurances, which, it must be reluctantly admitted, only too often, if not as a rule, guide in the social legislation of the present day. Dispassionate inquiry and a strict regard for the absolute truth and entire disinterestedness in the statement of the facts and conclusions must needs, in the course of time, secure better results in efforts to ameliorate the condition of the poor than the numerous and varied philanthropic benevolences, tending largely to continue or keep alive the very evils which they are supposed to relieve, to eliminate, or to cure. (See Statistical Appendix No. 10.)

Social research along the lines indicated is, therefore, an imperative duty and the pre-requisite for national social progress, and nowhere in the world more needed than in these United States, where, by a combination of circumstances and conditions the problems of poverty and social discontent are coming to the front at a much earlier period in our national existence than our enormous natural resources would have led us to anticipate. To research work of this character the very best ability may very well devote itself, since the advancement of the nation's interest cannot be better conserved than by the seeking for the truth which concerns national social progress and by a statement of facts and conclusions which will serve as an unerring guide in the patriotic aim to make this land of ours a better land to live

* Consult "The State and Charity," by Thomas Mackay, London, 1898; also "The Dead Hand," by Sir Arthur Hobhouse, London, 1880; and the very early and rare "Plan to Prevent Charitable Donations for the Benefit of Poor Persons from Loss, Embezzlement, Non-Application, Misapplication, Fraud and Abuse in Future," by William Beckwith, London, 1807.

in. The problem of poverty and social discontent resolves itself finally into one of rational education, which, however, is out of the question until the true principles of social science are first ascertained and made known in the form of a broad generalization within the understanding and the comprehension of the American people. Social research which will eliminate the overwhelming amount of error and falsehood which now permeates public opinion upon the most important questions demanding solution will serve the highest possible purpose which any effort in this direction can aim to secure for the betterment of the human race.

STATISTICAL APPENDIX TO PROBLEM NO. 1.

FAMILY EXPENDITURES OF WAGE-EARNERS IN THE UNITED STATES.

Result of Investigation of United States Department of Labor (2,567 Families).

Average Expenditure for	Amount.	Per Cent.
Food	\$326.90	42.54
Rent	99.49	12.95
Clothing	107.84	14.04
Fuel and light	40.38	5.25
Insurance (life)	19.44	2.53
Miscellaneous	174.49	22.69
Total	\$768.54	100.00

NOTE.—The average income of these 2,567 families was \$827.19, which, after deducting average expenditures of \$768.54, leaves a margin for savings and investment of \$68.65. The average size of the family was 5.3. (See Eighteenth Annual Report of United States Commission of Labor, p. 648.)

STATISTICAL APPENDIX TO PROBLEM NO. 3.

CLASSIFICATION OF SAVINGS-BANK DEPOSITS RECEIVED DURING THE YEAR ENDING
OCT. 31, 1904, BY MASSACHUSETTS SAVINGS-BANKS.

	Number.	Amount.
Of \$50 and less	1,376,119	\$24,887,142.06
Exceeding \$50 and not more than \$100	192,462	15,534,343.10
" 100 " " 200	82,793	12,762,374.63
" 200 " " 500	62,501	22,223,022.52
" 500 and less than \$1,000	17,627	12,540,411.10
Of \$1,000 or more	11,685	12,068,984.35
	1,743,187	\$100,016,277.76

Twelve thousand eight hundred and sixteen transfers, amounting to \$5,449,870.92, are not included in the above table.

COMPARATIVE CLASSIFICATION OF DEPOSITS RECEIVED DURING YEARS 1894, 1899, 1904,
BY MASSACHUSETTS SAVINGS-BANKS.

	Percentage of Whole Number of Deposits.		
	1894.	1899.	1904.
Deposits of \$50 and less	75.52	77.43	78.94
" over \$50 and not exceeding \$100	12.06	11.12	11.04
" 100 " " 200	5.54	5.03	4.75
" 200 " " 500	4.44	4.30	3.59
" 500 " " 1,000	1.38	1.24	1.01
" of 1,000 or more	1.06	.88	.67

SAVINGS-BANKS STATISTICS OF CONNECTICUT.

Year ending Oct. 1, 1907.

Items.	Oct 1, 1907.
Number of depositors having less than \$1,000	464,341
Amount of such deposits	\$99,447,721.30
Depositors having \$1,000 and not over \$2,000	50,664
Amount of such deposits	\$66,877,950.99
Depositors having \$2,000 and not over \$10,000	24,446
Amount of such deposits	\$84,177,692.77
Depositors having over \$10,000	422
Amount of such deposits	\$5,868,696.50
Total number of depositors	539,873
Total amount of deposits	\$256,372,061.56
Largest amount due a single depositor	\$54,109.21
Average amount due depositors	\$474.87

STATISTICAL APPENDIX TO PROBLEM NO. 4.

STATISTICS OF SAVINGS-BANKS AND INDUSTRIAL INSURANCE IN THE UNITED STATES,
1875-1906.

Years.	Savings-banks.		Industrial Insurance.	
	Number of Deposits.	Amount of Deposits.	Number of Policies.	Amount of Insurance.
1875	2,359,864	\$924,037,304	—	—
1876	2,368,630	941,350,255	8,416	\$443,072
1877	2,395,314	866,218,306	11,226	1,030,655
1878	2,400,785	879,897,425	22,808	2,027,888
1879	2,268,707	802,490,298	60,371	5,651,589
1880	2,335,582	819,106,973	236,674	20,533,469
1881	2,528,749	891,961,142	367,453	33,501,740
1882	2,710,354	966,797,081	590,053	56,564,682
1883	2,876,438	1,024,856,787	877,334	87,793,650
1884	3,015,151	1,073,294,955	1,092,529	111,115,252
1885	3,071,495	1,095,172,147	1,377,150	145,938,241
1886	3,158,950	1,141,530,578	1,780,372	198,431,170
1887	3,418,013	1,235,247,371	2,310,003	255,533,472
1888	3,838,291	1,364,196,550	2,797,521	305,155,182
1889	4,021,523	1,425,230,349	3,365,461	365,841,518
1890	4,258,893	1,524,844,506	3,883,529	429,521,128
1891	4,533,217	1,623,079,749	4,319,817	481,919,116
1892	4,781,605	1,712,769,026	5,200,777	583,527,016
1893	4,830,599	1,785,150,957	5,751,514	662,050,129
1894	4,777,687	1,747,961,280	6,833,439	800,946,170
1895	4,875,519	1,810,597,023	6,952,757	820,740,641
1896	5,065,494	1,907,156,277	7,388,119	888,266,586
1897	5,201,132	1,939,376,035	8,005,384	996,139,424
1898	5,385,746	2,065,631,298	8,798,480	1,110,073,519
1899	5,687,818	2,230,366,954	10,050,847	1,293,125,522
1900	6,107,083	2,449,547,885	11,219,296	1,468,986,366
1901	6,358,723	2,597,094,580	12,337,022	1,640,857,553
1902	6,666,672	2,750,177,290	13,448,124	1,806,890,864
1903	7,035,228	2,935,204,845	14,603,694	1,977,599,397
1904	7,305,443	3,060,178,611	15,674,384	2,135,859,103
1905	7,696,229	3,261,236,119	16,872,583	2,309,754,235
1906	8,027,192	3,482,137,198	17,841,396	2,453,616,207

STATISTICAL APPENDIX TO PROBLEM NO. 5.

COMPARATIVE MORTALITY STATISTICS BY OCCUPATIONS, ENGLAND AND WALES, 1890-92.

Rate per 1,000 Living at each Period of Life.

Ages.	Occupied Males (England and Wales).	Occupied Males Industrial Districts.	Occupied Males Agricultural Districts.	Unoccupied Males.
15-19	2.6	3.1	2.1	35.9
20-24	5.1	5.5	4.7	29.6
25-34	7.3	8.7	6.0	27.1
35-44	12.4	15.9	9.0	35.7
45-54	20.7	27.8	13.8	37.8
55-64	36.7	50.2	26.1	59.4
65 and over	102.3	120.4	93.9	105.9

THE PERCENTAGE DISTRIBUTION OF DEATHS FROM CONSUMPTION IN THE MORTALITY FROM ALL CAUSES BY SELECTED OCCUPATIONS.

Industrial Mortality Experience of the Prudential Insurance Company of America, 1897-1906.

Occupations.	Percentage of Deaths from Consumption at Specified Periods of Life.				
	15-24.	25-34.	35-44.	45-54.	55-64.
Brass Workers	59.1	50.0	45.1	24.1	20.4
Carpet and Rug Makers	52.9	45.5	35.3	20.8	11.8
Glass-cutters	26.9	46.7	40.7	25.0	12.5
Grinders	57.1	70.8	63.2	40.0	25.0
Hatters	53.8	55.4	45.4	26.7	14.8
Polishers	45.8	56.0	42.7	22.9	21.1
Printers	48.6	56.4	40.5	19.9	9.2
Spinners	46.4	50.0	44.4	25.9	2.7
Stone Workers	47.6	52.6	47.7	39.2	26.1
Tailors	39.6	58.8	36.0	17.3	10.1
Weavers	39.8	53.4	38.1	25.7	10.9
Woollen Mill Employees	35.0	43.8	35.7	21.1	12.5

MORBIDITY STATISTICS OF MASSACHUSETTS, 1905.

Result of State Census.

Ages.	Acute Diseases (accidents included).			
	Males.		Females.	
	Number of Cases.	Rate per 1,000 Living.	Number of Cases.	Rate per 1,000 Living.
Under 16	732	1.55	648	1.37
17-29	409	1.11	451	1.10
30-49	557	1.30	556	1.28
50-69	310	1.67	319	1.53
70 and over	71	1.75	97	1.83
All ages	2,081	1.38	2,089	1.32

MORBIDITY STATISTICS OF MASSACHUSETTS, 1905.

Result of the State Census.

Ages.	Chronic Diseases (accidents included).			
	Males.		Females.	
	Number of Cases.	Rate per 1,000 Living.	Number of Cases.	Rate per 1,000 Living.
Under 16	623	1.32	568	1.20
17-29	979	2.65	923	2.25
30-49	2,356	5.48	2,511	5.78
50-69	5,394	29.01	4,253	20.32
70 and over	2,468	60.94	2,125	40.19
All ages	11,825	7.85	10,392	6.56

NOTE.—For a discussion of these statistics see my article in the *Spectator* for Dec. 19 and 26, 1907.

STATISTICAL APPENDIX TO PROBLEM NO. 6.

THE FATAL ACCIDENT RATES IN COAL MINING AND RAILROAD TRANSPORTATION IN THE UNITED STATES, 1890-1906.

Rates per 1,000 of Persons Employed.

	Railroad Mail Clerks, etc.	Railroad Trainmen.	Railroad Switch- men, Flagmen, Watchmen.	Other Railroad Employees.	Total Railroad Employees.	Coal Mining, North America.
1890	0.69	9.52	6.21	1.36	3.27	2.43
1891	2.16	9.57	7.44	1.42	3.39	3.30
1892	0.78	8.88	6.85	1.24	3.11	2.51
1893	1.50	8.72	6.67	1.32	3.12	2.53
1894	0.58	6.43	5.00	1.00	2.34	2.48
1895	0.99	6.45	5.75	0.93	2.31	2.67
1896	0.67	6.57	4.74	0.93	2.25	2.79
1897	1.85	6.05	4.59	0.83	2.06	2.34
1898	0.88	6.68	5.14	0.88	2.24	2.59
1899	0.72	6.46	5.61	1.11	2.38	2.98
1900	0.46	7.30	5.36	1.14	2.51	3.25
1901	0.78	7.35	3.68	1.18	2.50	3.24
1902	0.95	7.43	3.96	1.20	2.50	3.49
1903	1.75	8.16	5.66	1.24	2.75	3.14
1904	1.60	8.33	4.95	1.29	2.80	3.37
1905	0.99	7.50	2.99	1.15	2.43	3.44
1906	1.20	8.09	2.96	1.24	2.58	3.16

THE PERCENTAGE DISTRIBUTION OF DEATHS FROM ACCIDENTS IN THE MORTALITY FROM ALL CAUSES BY SELECTED OCCUPATIONS.

Industrial Mortality Experience of the Prudential Insurance Company of America, 1897-1906.

Occupations.	Percentage of Deaths from Accidents at Specified Periods of Life.				
	15-24.	25-34.	35-44.	45-54.	55-64.
Boatmen	54.6	24.7	18.1	31.0	14.7
Captains (navigation)	60.0	66.7	14.3	30.0	13.3
Electric Linemen	55.3	56.8	38.2	30.0	—
Fishermen	45.5	36.8	23.8	10.0	7.5
Miners (1897-1902)	51.4	48.5	40.4	18.2	10.8
Quarrymen	77.8	45.5	32.4	28.6	18.6
Railroad Brakemen	83.4	69.6	52.7	48.1	29.6
Railroad Conductors	50.0	42.9	31.0	22.7	17.6
Railroad Engineers	40.0	61.9	37.9	25.0	19.5
Railroad Firemen	64.8	58.9	43.5	14.3	—
Railroad Flagmen and Switchmen	61.5	50.0	34.9	25.5	20.6
Sailors	50.7	17.3	24.2	12.7	10.2

STATISTICAL APPENDIX TO PROBLEM NO. 7.

PERSONS HAVING DEFECTIVE PHYSICAL CONDITIONS,—MASSACHUSETTS, 1895.

Result of the State Census.

	Males.	Females.	Total.
Acute diseases	1,132	1,361	2,493
Chronic diseases	7,034	6,394	13,428
Maimed	2,543	267	2,810
Lame	4,175	2,490	6,665
Bedridden	55	188	243
Paralytic	1,394	1,098	2,492
Epileptic	469	281	750
Insane	584	926	1,510
Idiotic	571	365	936
Deaf	1,494	2,324	3,818
Dumb	50	37	87
Deaf and Dumb	423	334	757
Blind	1,672	1,269	2,941
Other defective physical conditions	690	435	1,125
Physical defects in combinations	1,150	656	1,806
Total	23,436	18,425	41,861

STATISTICAL APPENDIX TO PROBLEM NO. 9.

COMPARATIVE MORTALITY FROM SUICIDES.

American Cities, 1892-1906.

Years.	Population.	Suicides.	Rates per 100,000 Population.
1892	11,541,918	1,568	13.6
1893	11,862,348	1,937	16.3
1894	12,192,328	1,951	16.0
1895	12,535,743	1,992	15.9
1896	12,887,435	2,135	16.6
1897	13,250,791	2,372	17.9
1898	13,669,422	2,397	17.5
1899	14,014,422	2,327	16.6
1900	14,415,482	2,365	16.4
1901	14,829,438	2,489	16.8
1902	15,258,316	2,717	17.8
1903	15,701,501	2,998	19.1
1904	16,159,758	3,285	20.3
1905	16,643,724	2,987	18.0
1906	17,135,840	2,919	17.0
1892-1896	61,019,772	9,583	15.7
1897-1901	70,179,555	11,950	17.0
1902-1906	80,899,139	14,906	18.4

STATISTICAL APPENDIX TO PROBLEM NO. 10.

AVERAGE WEIGHT AND HEIGHT OF BOYS IN GLASGOW SCHOOLS ACCORDING TO THE
SIZE OF HOUSING ACCOMMODATIONS.

Age.	Average Weight (<i>Pounds</i>).				Average Height (<i>Inches</i>).			
	1 Room.	2 Rooms.	3 Rooms.	4 Rooms.	1 Room.	2 Rooms.	3 Rooms.	4 Rooms.
5	37.2	38.6	39.5	40.1	39.0	39.9	40.7	41.4
6	40.4	41.6	42.9	43.4	41.1	41.8	42.5	43.0
7	43.3	45.0	47.0	47.6	42.7	43.6	45.0	45.1
8	48.0	48.9	50.4	51.6	45.0	45.6	46.4	47.1
9	51.4	53.1	54.8	56.3	46.5	47.6	48.2	48.9
10	55.5	57.7	59.7	61.0	48.3	49.3	50.1	50.8
11	60.0	62.2	64.5	66.2	50.1	50.9	51.7	52.4
12	65.3	67.2	69.3	71.9	51.8	52.6	53.5	54.4
13	69.9	72.3	75.3	76.8	53.4	54.1	55.1	55.8
14	73.0	76.7	81.6	84.2	54.3	55.4	57.0	58.0

AVERAGE WEIGHT AND HEIGHT OF GIRLS IN GLASGOW SCHOOLS ACCORDING TO THE
SIZE OF HOUSING ACCOMMODATIONS.

Age.	Average Weight (<i>Pounds</i>).				Average Height (<i>Inches</i>).			
	1 Room.	2 Rooms.	3 Rooms.	4 Rooms.	1 Room.	2 Rooms.	3 Rooms.	4 Rooms.
5	36.6	37.8	38.0	39.2	38.9	39.8	40.2	41.0
6	39.5	40.5	41.0	43.1	40.6	41.4	42.0	43.2
7	42.9	43.7	44.6	46.0	42.7	43.2	43.9	44.7
8	45.9	47.1	48.6	50.3	44.3	45.0	45.9	46.5
9	49.6	51.4	52.8	54.7	46.2	46.9	47.7	48.6
10	53.5	55.4	57.6	58.7	47.8	48.7	49.6	50.3
11	59.3	60.1	62.4	64.6	49.9	50.5	51.3	52.1
12	64.0	66.3	68.7	70.6	51.6	52.6	53.4	54.1
13	71.9	73.9	76.3	79.3	53.9	54.8	55.5	56.4
14	74.0	79.8	84.3	89.1	54.8	56.3	57.6	58.6